

# Diagnosis and Management of Anorectal Disorders in the Primary Care Setting



Danielle Davies, MD<sup>a,b,\*</sup>, Justin Bailey, MD<sup>b,c</sup>

## KEYWORDS

- Rectal prolapse • Hemorrhoids • Anal fissure • Proctalgia fugax • Levator ani

## KEY POINTS

- Avoiding constipation through diet modification and use of over-the-counter medications can prevent many of the common anorectal disorders that present to the primary care physician.
- Rectal prolapse should be reduced when possible and can be treated conservatively in most situations, although patients with recurrence may require surgical intervention.
- Pruritus ani often has an inciting event, but treatment should focus on stopping the itch-scratch cycle that worsens the symptoms.
- Thrombosed external hemorrhoids can be excised in the office when patients present within 72 hours of onset and when they do not have improvement in symptoms.
- Internal hemorrhoids can be successfully banded in the office, although postprocedure pain is common.

## INTRODUCTION

Anorectal disorders are very common among a wide population of patients. Because patients may be embarrassed about the anatomic location of their symptoms, they may present to care late in the course of their illness. Care should be taken to validate patient concerns and normalize fears. This article discusses the diagnoses and management of common anorectal disorders among patients presenting to a primary care physician.

## RECTAL PROLAPSE

Rectal prolapse, also known as rectal procidentia, occurs when the rectum protrudes through the anus. This protrusion may involve just the mucosa and submucosa (partial

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The authors have nothing to disclose.

<sup>a</sup> Department of Family Medicine, University of Washington, Seattle, WA 98195, USA;

<sup>b</sup> Department of Family Medicine, Family Medicine Residency of Idaho, 777 North Raymond Street, Boise, ID 83702, USA; <sup>c</sup> Department of Family Medicine, University of Washington School of Medicine, 331 North East Thornton Place, Seattle, WA 98125, USA

\* Corresponding author. Family Medicine Residency of Idaho, Boise, ID 83704.

E-mail address: [Danielle.davies@fmridaho.org](mailto:Danielle.davies@fmridaho.org)

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prolapse) or the full thickness of the wall of the rectum (complete prolapse).<sup>1</sup> The exact prevalence has not been well-characterized, but a small study estimated the incidence to be approximately 2.5 per 100,000 people annually with women being 9 times more likely to be affected.<sup>2</sup> Rectal prolapse can also be seen in children, most commonly in infancy. Rectal prolapse more commonly occurs in patients who are younger than 4 years of age than in those who are older.<sup>3</sup>

The exact cause of rectal prolapse has not been completely delineated. Risks factors seem to include constipation, multiparity, and pelvic floor dysfunction, among others.<sup>1</sup> Underlying conditions that are often associated with rectal prolapse in children include constipation, weakened pelvic floor muscles, and increased intraabdominal pressure. Additional consideration should be given to the presence of infectious diarrhea, diseases of the rectum including parasites and neoplasia, malnutrition, and cystic fibrosis.<sup>2</sup>

Because the process of rectal prolapse typically develops over time, affected adults often present complaining of a rectal bulge with defecation. Patients might also complain of fecal incontinence, bleeding, and pain. Diagnosis in the office setting usually involves reproducing the prolapse by having the patient perform the Valsalva maneuver in a squatting position or while on a commode. Partial prolapse involves just the rectal mucosa and is usually less pronounced than a complete prolapse, which involves the full thickness of the rectal wall. A complete prolapse typically involves a thick, fully circumferential red-colored prolapse demonstrating mucosal folds in circumferential rings. The orientation of the rectal mucosa folds in a partial prolapse run linearly from proximal to distal on the long axis of the intestine.<sup>1</sup> Rectal procidentia is described by grade in the case of a full-thickness prolapse and by degree in the case of mucosal prolapse (**Tables 1** and **2**).

If prolapse cannot be reproduced upon evaluation but is suspected by the history, defecography can be useful in making a diagnosis but cannot completely rule out prolapse.<sup>4</sup> Defecography, also referred to as evacuation or voiding proctography, involves the use of a barium paste inserted into the rectum followed by fluoroscopy or MRI while the patient passes the paste while sitting on a commode.<sup>5</sup> In children, the condition is often noticed by family members and has typically spontaneously reduced at the time of presentation. The diagnosis is inferred through the history.<sup>3</sup>

Rectal prolapse may or may not present with incarceration. Incarcerated rectal prolapses should have manual reduction attempted. Irreducibility is rare. Reduction is performed by encircling the prolapsed bowel with the fingertips and applying steady pressure, which may need to be quite firm if there is edema. Successful reduction should be followed by digital rectal examination.<sup>3</sup> If unsuccessful, subsequent attempts at reducing the prolapse can include use of local or general anesthesia to achieve relaxation of the pelvic floor musculature. Cold compresses can be applied to reduce swelling. In a case study of 15 patients with initially irreducible rectal procidentia, 4 patients had successful replacement with diclofenac or tramadol for pain relief, and 2 were successfully replaced after the application of simple table sugar

**Table 1**  
**Degree of partial rectal prolapse**

<b>Degree</b>	<b>Level of Mucosal Prolapse</b>
First	Into anal canal
Second	To dentate line
Third	To anal verge

**Table 2**  
**Grade of complete rectal prolapse**

Grade	Level of Rectal Prolapse
I	Does not extend to level of rectocele
II	Does not extend to sphincter
III	Impinges on sphincter
IV	Enters the sphincter
V	Passes the sphincter

(an osmotic agent to reduce edema); 8 required general anesthesia. Five cases that included the application of sugar were not reduced successfully.<sup>6</sup> Overall there are few risks to the application of sugar. A prolapse that is not reduced may become necrotic or gangrenous, at which point surgical intervention will be required.<sup>7</sup> Cases of immediate recurrence of the prolapse can be treated by firmly affixing the buttocks together with tape for several hours.<sup>3</sup> Successfully reduced rectal prolapse can be treated with conservative medical management, which should aim at eliminating straining with bowel movements and increasing pelvic floor strength. Treatment of constipation is crucial. Medications aimed at creating soft bowel movements to minimize straining with defecation are listed in **Table 3**. No one medication is considered superior to another. It is this author's approach to use stool softeners and osmotic agents before prescribing bowel stimulants. In the case of a prolapse that is unable to be reduced manually, immediate referral to a surgeon should be made. Surgical consultation can also be made on an outpatient basis for those with recurrent prolapse (**see Table 3**)

## ANAL FISSURE

Anal fissure has been estimated to have an annual incidence of 0.11% affecting approximately 1 person in 1000 yearly but study estimates varies widely. One retrospective population-based study found that the disorder more commonly affected females ages 12 to 24 and males 55 to 64 years of age.<sup>8</sup> Risk factors included chronic constipation, obesity, hypothyroidism, and solid tumors.<sup>8</sup>

Anal fissures are thought to be caused by the local trauma induced by inspissated feces. Anal spasm can additionally cause ischemia of sensitive rectal tissue, which exacerbates the condition.<sup>9</sup> The blood flow to the most common site of anal fissures is thought to be about one-half of that to other areas of the anal canal, creating an area of poor healing.<sup>10</sup>

Patients often complain of severe rectal pain, especially with bowel movements, described as sharp, "like passing shards of glass." Passage of blood is also possible, but is less common as the first presenting symptom. External examination can confirm the diagnosis. A small tear in the skin of the anus is present, most often in the posterior midline and begins at the dentate line and ends at the anal verge.<sup>8</sup> Fissures are classified into acute and chronic based on the duration of symptoms, acute meaning that symptoms have been present less than 2 to 3 months and chronic being defined as present for more than 3 months.<sup>10</sup>

Treatment is aimed at reducing anal spasm. Studies have compared the efficacy of watchful waiting, topical therapies (nifedipine, diltiazem, and nitroglycerin), internal sphincterotomy, and injection of botulinum toxin. A large Cochrane review, which compared the efficacy of 17 different therapies, established that topical nitroglycerin is better than placebo for anal fissures and is equivalent to botulinum toxin injection and topical calcium channel blockers. However, nitroglycerin tends to cause more

**Table 3**Available therapies for constipation (cost estimated from [Amazon.com](#) and [Goodrx.com](#))

Medication	Brand Names	Mechanism	Suggested Dose	Cost/Availability
Docusate sodium	Colace	Stool softener	100 mg BID	\$5 for 400/OTC
Docusate calcium	Surfak	Stool softener	240 mg/d	\$10/100/OTC
Polyethylene glycol	Miralax	Osmotic agent	17 g QD-BID	\$10–13/510 g/OTC
Magnesium citrate	N/A	Osmotic agent	75–150 mL BID	\$10/10oz/OTC
Lactulose	Kristalose	Osmotic agent	15–30 mL BID	\$80/900 mL/prescription
Bisacodyl	Dulcolax Pink	Stimulant	5–15 mg QD	\$5/1000 5 mg tab/OTC
Senna	Senokot	Stimulant	8.6 mg tablets up to 4 daily	\$13/1000 8.6 mg tab/OTC
Psyllium	Metamucil	Bulk-forming agent	3.4 g up to TID	\$25/1300 g/OTC
Methylcellulose	Citrucel	Bulk-forming agent	1 Tbsp up to TID	\$12/454 g/OTC
Polycarbophil	FiberCon	Bulk-forming agent	2 tabs QD-QID	\$20/140 tabs/OTC
Wheat dextrin	Benefiber	Bulk-forming agent	2 tsp TID	\$20/25.6 oz/OTC

Abbreviations: BID, 2 times per day; OTC, over the counter; QD, once per day; QID, 4 times per day; TID, 3 times per day.

side effects, specifically headache. In the case of chronic fissures, surgical intervention is significantly more effective than medical management, but carries the additional risk of incontinence.<sup>11</sup> Ongoing care aimed at reducing recurrence should focus on eliminating straining with bowel movements (**Table 4**).

<b>Table 4</b> <b>Therapies for anal fissure</b>		
<b>Intervention</b>	<b>Studied Dosages</b>	<b>Effectiveness</b>
NTG paste	0.2%–0.5% PR BID-TID for 4–8 weeks (all doses equal in effectiveness).	NNT = 7 for healing vs placebo, may have a higher recurrence rate vs surgery (up to 50% in medication use; headache most common side effect). <sup>11</sup>
Lidocaine	5% PR BID for 8 weeks.	Similar to NTG. <sup>11</sup>
Nifedipine	0.2%–0.3% BID for 3 weeks.	Similar to NTG. <sup>11</sup>
Botulinum toxin	20–50 IU injection, up to twice; superior healing rates were seen with anterior placement of Botox away from fissured area.	Similar to NTG. Effectiveness varied widely based on study design (40%–90% healing rates). No better or worse than NTG in head to head trials, NNT = 3 on placebo studies. Upwards of 50% recurrence rate at 1 year (transient mild incontinence presenting as main side effect in 7% of patients) seen most seen in. <sup>11,33</sup>
Diltiazem	2% topical. May also be used orally.	Similar to NTG. <sup>11</sup>
Clove oil	1% TID for 6 weeks.	Small studies; difficult to draw conclusions. <sup>11</sup>
Sitz bath	BID for 4 weeks.	May reduce anal pressure and burning with warm Sitz baths. No data found on cure rates, usually combined with medication. <sup>11</sup>
Sildenafil	10% TID for 7 days.	Relaxes anal tone. More studies needed to show if this could be of benefit. <sup>11</sup>
Isosorbide mononitrate	0.1% BID for 6 weeks.	Not as effective as topical preparations. May not be more effective than placebo. <sup>11</sup>
Isosorbide dinitrate	1% five time daily for 10 weeks.	Not as effective as topical preparations. May not be more effective than placebo. <sup>11</sup>
Sphincterotomy	Surgical cutting the anal sphincter.	There are 89% cure rates; 10% rate of anal incontinence (similar to Botox). Recurrence rate 3%. <sup>11</sup>

**Abbreviations:** BID, 2 times per day; NNT, number needed to treat; NTG, nitroglycerin; PR, per rectum; TID, 3 times per day.

## HEMORRHOIDS

Hemorrhoids are one of the most common anorectal disorders to present to primary care offices. Because not all hemorrhoids cause symptoms, determining the exact prevalence has proven difficult. In the United States, a national survey showed that 4.4% of people complained of hemorrhoids.<sup>12</sup> Another study reported a finding of hemorrhoids in 39% of people presenting for routine colonoscopy with just under one-half of them reporting related symptoms.<sup>13</sup>

Increased intraabdominal pressure, as seen in chronic constipation, causes engorgement of the vascular plexuses surrounding the anal canal resulting in the development of hemorrhoids.<sup>1</sup> When this occurs above the dentate line, the superior hemorrhoidal plexus creates painless internal hemorrhoids. Conversely the inferior hemorrhoidal plexus gives rise to external hemorrhoids which are painful owing to their somatic innervation.<sup>10</sup>

Internal and external hemorrhoids are 2 very distinct entities when it comes to diagnosis, classification, and acute management. Internal hemorrhoids are classified based on a grading system. Grade 1 hemorrhoids do not extend distal to the dentate line. Grade 2 hemorrhoids may prolapse past the dentate line with straining but spontaneously reduce. Grade 3 hemorrhoids require manual reduction. Grade 4 hemorrhoids cannot be reduced manually<sup>10</sup> (**Table 5**).

External hemorrhoids do not have a similar grading system, but are classified as thrombosed versus nonthrombosed. The typical presenting complaints for external nonthrombosed hemorrhoids include itching and bleeding. In the case of thrombosed hemorrhoids, symptoms include bleeding, pain, and constipation.<sup>14</sup> Hemorrhoids are easily diagnosed on external rectal examination. External hemorrhoids also appear pink, but may become purple-blue when they become thrombosed and are usually quite tender.<sup>15</sup>

Internal hemorrhoids usually present with painless rectal bleeding. Grade 4 internal hemorrhoids may present with perineal irritation or pruritus, a sense of incomplete evacuation, or rectal fullness. When a prolapsed internal hemorrhoid becomes strangulated, patients most commonly complain of pain. Physical examination should ensure there is not a comorbid diagnosis such as anal fissure.<sup>16</sup> Careful physical examination including a digital rectal examination and anoscopy can diagnose internal hemorrhoids. They are typically purple-blue in appearance. Like external hemorrhoids, prolapsed internal hemorrhoids can be diagnosed by external examination of the anus. Prolapsed internal hemorrhoids typically appear as shiny pink protrusions. Although typically painless, a prolapsed internal hemorrhoid may be tender on palpation.<sup>15</sup>

Management of hemorrhoids depends their location, grade, and if thrombosis has occurred. In general, education and interventions should be aimed at therapies that avoid exacerbation of hemorrhoids along with symptomatic management. Avoiding

**Table 5**  
**Grades of internal hemorrhoids**

Grade	Definition
1	Enter lumen of bowel but do not extend to the dentate line.
2	Prolapse past the dentate line with straining but reduce with relaxation.
3	Prolapse past the dentate line with straining and require manual reduction.
4	Unable to be reduced.

exposure to prolonged periods of increased rectal pressure can help to prevent the formation of both internal and external hemorrhoids. Therapies in this case should focus on creating soft bowel movements through the use of fiber supplements or other bulk-forming agents (see **Table 3**). Fiber therapy alone was found to reduce overall symptoms by 53% (relative risk, 0.47; 95% CI, 0.32–0.68).<sup>17</sup> Patients should also be educated in avoiding prolonged periods of time on the toilet.<sup>15</sup> About one-half of patients will have improvement of internal hemorrhoids with conservative therapy.

For grades 1 to 3 internal hemorrhoids, rubber band ligation, sclerotherapy, and infrared coagulation can be used in the primary care office. There remains some controversy about the most effective strategy for in-office treatment. Two large meta-analyses showed that those treated with rubber band ligation were more likely to have resolution of hemorrhoids at the 1-year follow-up, although patients experienced more postoperative pain.<sup>18,19</sup> There are a variety of commercially available rubber band ligators that can be used in the primary care office. Traditionally, in conjunction with an anoscope, the instrument uses suction to draw the hemorrhoid into the instrument and a rubber band is deployed around the base of the hemorrhoid.<sup>16</sup> Sclerotherapy uses caustic agents injected at the base of grades 1 to 3 hemorrhoids and is effective in 75% to 89% of cases. Although sclerotherapeutic preparations may vary, 1 mL of 10% phenol can be injected using a 21- or 25-gauge spinal needle into the base of the hemorrhoid under direct visualization.<sup>20</sup> Infrared coagulation (a concentrated light that is used to produce a predictable shallow burn that causes the layers of the hemorrhoid vessel to scar to each other) also can achieve sclerosis of the hemorrhoidal tissue and has been shown to be less painful in studies.<sup>20</sup> Hemorrhoids are treated with 1.5 seconds of exposure with 3 subsequent burns placed in a row or diamond pattern above the hemorrhoid being treated.<sup>20</sup> No more than 2 separate hemorrhoids should be treated per session. Surgical management, such as excisional hemorrhoidectomy and stapled hemorrhoidopexy, should be reserved for persistent grade 3 hemorrhoids and grade 4 internal hemorrhoids because, although effective, there are increased side effects associated with surgical management, most notably postoperative pain.<sup>14</sup> Further consideration is not given here to surgical approaches including Doppler-guided transanal ligation, owing to their lack of applicability in the primary care office setting.

External hemorrhoids can be managed with topical preparations, most of which are available over the counter. Sitz baths can help with edema of external hemorrhoids and internal prolapsed hemorrhoids. Topical corticosteroids can be effective in decreasing irritation associated with hemorrhoids but should not be used for greater than a week owing to the risk of skin atrophy. Topical therapy with mineral oil, petroleum, and phenylephrine can provide relief, although these products do not treat hemorrhoids or prevent progression or recurrence. A topical preparation of nifedipine and lidocaine ointment can be compounded and may help with resolution of acutely thrombosed external hemorrhoids and alleviation of pain. A small study of 98 patients compared topical 0.3% nifedipine with 1.5% lidocaine twice daily for 12 weeks with a control group using topical lidocaine alone. Symptomatic relief was obtained within 7 days of therapy in 86% of patients versus 50% in the control group ( $P < .01$ ). Resolution of the thrombosis at the 2-week mark occurred in 92% of patients in the treatment group versus 46% in the control group.<sup>21</sup> Thrombosed external hemorrhoids presenting within 72 hours of symptom onset can be evacuated in the clinic.<sup>1</sup> Beyond 72 hours, studies have shown increased postprocedure pain after evacuation. Consideration should be given to surgical intervention when patients have worsening rather than improving pain. Thrombosed external hemorrhoids may be removed in the office setting by first injecting the area with a local anesthetic. An elliptical incision is made

over the hemorrhoid, excising the entire thrombus rather than simply lancing out part of the clot. Patients can be instructed to use Sitz baths at home and over-the-counter preparations for continued wound care at home.<sup>20</sup>

### PROCTALGIA FUGAX

Proctalgia fugax is a disorder characterized by sharp pain that passes quickly in the rectum. Prevalence rates are as high as 18% in the general population. Onset is unlikely before puberty.<sup>22</sup>

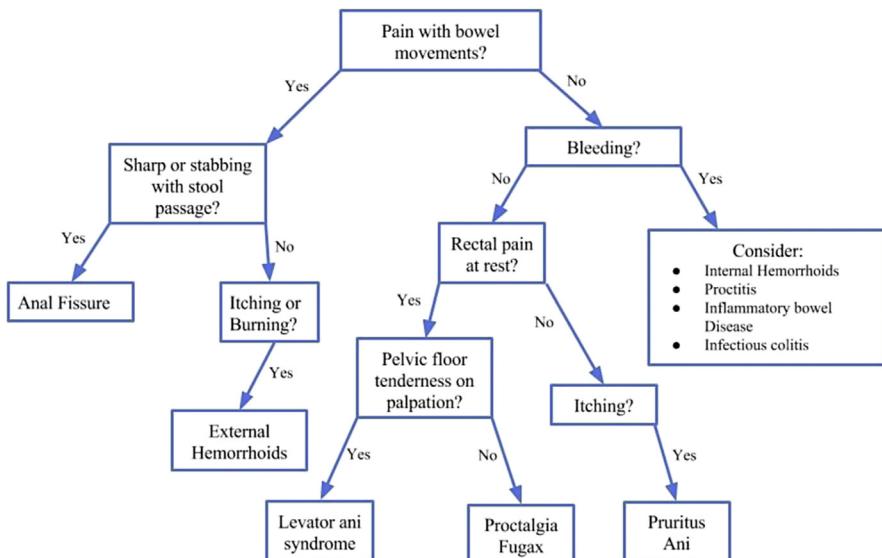
The pathophysiology of proctalgia fugax is not fully understood and may result from smooth muscle contractions.<sup>23</sup> Several studies have tried to measure intraluminal pressures in the anorectal vicinity during an episode. Findings in these studies were inconsistent. One study demonstrated increased sigmoid pressure during an attack.<sup>22</sup> Another found increased baseline resting pressures with increased anal sphincter tone, and slow wave smooth muscle activity during an attack.<sup>22</sup> There has reportedly been an association with intercourse, masturbation, stress, defecation, sitting in a chair, drinking alcohol, cold nights, sexual frustration, and menstruation, but episodes can also occur spontaneously. Historically speaking, proctalgia fugax has been associated with neuroticism, perfectionism, and anxiety, and some studies supported this finding, although only correlation, not causation, has been established.<sup>22</sup>

Proctalgia fugax may be diagnosed when the patient reports recurrent episodes of rectal pain, lasting less than 30 minutes. These episodes are not associated with defecation and patients do not experience pain between episodes. Other causes of rectal pain must be excluded, including inflammatory bowel disease, rectal abscess, rectal fissure, thrombosed hemorrhoid, prostatitis, coccygodynia, and major structural alterations of the pelvic floor such as pelvic organ prolapse.<sup>22</sup> However, the presence of another diagnosis does not exclude patients from also having proctalgia fugax. Fifty percent of patients will have up to 5 attacks yearly.<sup>23</sup>

Often, attacks of proctalgia fugax are self-limited and brief, making treatment unnecessary. Numerous treatment modalities have been tried and aim to induce sphincter relaxation. Suggested interventions include anorectal digital dilation, activation of the anorectal reflex through food consumption, position changes including knees to chest, hot baths, and forced evacuation of the rectum. In case reports, topical 2% diltiazem and 0.2% glyceryl trinitrate have been effective. Oral calcium channel blockers, clonidine, and intravenous lidocaine have also been effective in case reports, but no trials have proved significant efficacy.<sup>22</sup> For patients with longer lasting episodes (>20 minutes), a small study did show some evidence that inhaled salbutamol shortened the duration and severity of attacks compared with placebo.<sup>24</sup> A small trial of 5 patients with proctalgia fugax were treated with 25 IU of botulinum A toxin. Only 1 patient required a supplementary dose of 50 IU and all patients remained symptom free at the 2-year point.<sup>25</sup> In some cases, endoanal ultrasound examination has identified a thickened internal anal sphincter, and 1 case report suggested that this was familial. Limited internal anal sphincterotomy has been effective in these cases.<sup>22</sup> Therapy should aim at reassurance. Conservative treatment measures are usually indicated owing to the fleeting nature of symptoms. For those patients with persistent bothersome symptoms an algorithm (Fig. 1) can be used for escalating therapy.

### LEVATOR ANI SYNDROME

Levator ani syndrome, also known as levator spasm, puborectalis syndrome, chronic proctalgia, pyriformis syndrome, and pelvic tension myalgia, affects approximately



**Fig. 1.** Algorithm to aid in the approach to diagnosis of common anorectal disorders.

6.6% of the population with an estimated one-third of affected individuals seeking medical attention for symptomatic relief.<sup>26</sup> To meet the criteria for diagnosis of levator ani syndrome, patients must have chronic or recurrent rectal pain or aching with episodes lasting for longer than 30 minutes and tenderness during posterior traction of the puborectalis muscle. There can be no other causes of pain, including inflammatory bowel disease, rectal abscess, rectal fissure, thrombosed hemorrhoid, or major structural alterations of the pelvic floor (such as pelvic organ prolapse or prior surgical intervention). These criteria must be fulfilled for the previous 3 months with onset at least 6 months prior.<sup>23</sup>

Patients usually complain of a dull aching sensation in the rectum. Provoking factors may include sitting and patients may report improvement with laying down or standing. Digital rectal examination should be undertaken in the office. The examiner may note increased tone in the levator ani muscles and tenderness of the pelvic floor, which is often worse on the left. Because the diagnostic criteria require ruling out several other differential diagnoses, patient with suspected levator ani syndrome will likely need further workup with appropriate testing.<sup>26</sup>

Therapies are limited and treatment is typically challenging, especially because patients may have comorbid psychiatric illness and/or neurotic tendencies. A prospective, randomized, controlled trial compared the effectiveness of biofeedback focusing on pelvic floor relaxation, electrogalvanic stimulation, and levator muscle massage and found that patients in the biofeedback group had the greatest reduction in intensity and frequency of pain symptoms.<sup>27</sup> A small study did not show any improvement with botulinum toxin injection into the levator muscles.<sup>28</sup>

## PRURITUS ANI

Pruritis ani is described as an intense itch affecting the perianal area. Because many patients do not present to care, the epidemiology is difficult to obtain but it is estimated that 1% to 5% of the population suffers from perianal itching.<sup>14</sup>

There are a multitude of primary inciting causes of pruritus ani. The general cycle includes an initial irritative event causing pruritus, which incites scratching by the patient and intensification of the pruritus.<sup>14</sup> More than 100 different inciting events have described, and a complete listing is not included here. Contact dermatitis, certain foods, hemorrhoids, dermatologic conditions, hygiene issues including fecal soiling, medications, soaps, and clothing are among some of the commonly described inciting factors.<sup>29</sup>

Patients who present with anal itching should undergo rectal examination to check for treatable causative agent, including pinworms and hemorrhoids. Because dermatologic conditions can exist that cause perianal itching, skin distant to the anus should also be examined. In chronic pruritus ani, examination of the anus may reveal lichenification (often identified as fine white linear markings on the thickened skin).<sup>30</sup> Pruritus ani can either exist by itself or in combination with its inciting event. Examination should focus on identifying other treatable conditions that may be exacerbating symptoms.

Treatment should focus on stopping the itch-scratch cycle and maintaining proper hygiene. The first step should be avoiding inciting events. Patients should be advised to avoid irritants such as soaps, bubble baths cleansers, and certain foods (caffeinated beverages, alcohol, chocolate, tomatoes, spicy foods, prunes, figs, milk, spices, citrus, grapes, popcorn, and nuts). Because both a lack of hygiene and aggressive cleaning can initiate the cycle, gentle cleansing of the anus after bowel movements should be stressed. A barrier cream can be applied as well.<sup>29</sup> Because many patients may unknowingly contribute to the scratch-itch cycle while sleeping, medications that reduce itching including diphenhydramine and hydroxyzine can be given before sleep to aid in the reduction of scratching at night.<sup>14</sup> Medications are available for refractory cases. Topical 0.006% capsaicin was shown to be more effective than a menthol placebo in controlling pruritus in a small study.<sup>31</sup> Another study demonstrated efficacy of 1% hydrocortisone ointment as compared with placebo.<sup>32</sup> Anal tattooing with methylene blue is available for the most refractory cases. Subcutaneous and intradermal injections of 10 mL 1% methylene blue, 5 mL normal saline, 7.5 mL 0.25% bupivacaine with epinephrine, and 7.5 mL 0.5% lignocaine may help a small subset of patients, but does carry the risk of skin necrosis.<sup>29</sup> In summary, treatment should focus on eliminating inciting factors, treating the chronic pruritis, and educating the patient about the disease course.

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